General Index

Bass

A. rupestris, 146 Abra nitida, 113 Acartia tonsa, 60, 62, 63, 64, 65, 66, 67, 68, 70, 71, 72, 73 ACTH, 198–202 Actinocythereis exanthemata, 49, 55 Activity, fish, measurements of, 138-47 Acuticythereis multipunctata, 48, 52 tuberculata, 48, 53 Adrenal activity-blood glucose, 201 Adrenal histology, goldfish, 199 Adrenocorticotrophic hormon hormone, mammalian, 198 Aequipecten irradians, 3, 157 Agardhiella tenera, 3, 5 Age analysis, fish, 77 Aging, fish, 77 Alewife, 190, 192, 222 Algae, 67, 71, 85, 175 Alimentary canal puncture, fish, 214, 215 Allometric relationship, mammal, 217 Alosa aestivalis, 189, 190 pseudoharengus, 189, 190 Alutera schoepfi, 100 Alvordius maculatus, 104 American eel, 77, 137, 215 American oyster, 3 Ammodytidae, 215 Ampelisca sp., 184 Amphibian, 171 Amphipod, 128, 183 Amphiprora sp., 122, 123, 124, 125 Amphiuma means, 201 Anesthetic, fish, 194 Angelovic, J. W., 36-9; 90-4 Anguilla rostrata, 77, 78, 137, 215 Animal control, chemical, 179 Ant, 81 Aphredoderus sayanus, 75, 77, 78, 86 APL, 194, 195 hormone, spawn inducing, fish, 193 Aquatic nymph, 82 Arbacia, 157 punctulata, 37 Artemia, 97, 148, 157, 194, 195, 196 Arthropod, 171, 184, 188 Ascidian, 223 salinity tolerance, 223 York River, Virginia, 223-4 Asterionella japonica, 14, 122, 123,

B

radiation tolerance, 37, 38

Banded sunfish, 77 Barnacle, 62, 171, 172

Aurila conradi, 48, 52

124, 125

Aurelia, 96

Atlantic croaker, 3, 37

black, 76 largemouth, 83, 146, 173 striped, see striped Bay scallop, 157 Beetle, whirligig, 81 Biological clocks, 137 rhythms, 137, 138 Black bass, 76 Black bullhead, 146 Black crappie, food habits, 83 Black drum, 174 Blacknose dace, food habits, 77, 85 Blenny feather, 100 striped, 100 Blood chemistry, fish, 173-5 glucose, adrenal activity, correlation, 201 nitrogen, determination of, 165 potassium, crab, 34 sampling crab, 31, 165 fish, 90-1, 173-4 Folin-Malmros, 198-201 Glucostat, 198-201 sodium, crab, 34 sugar goldfish, 198-201 values, fish, 201 Bloodworm, 97 Blueback herring, 190, 191, 192 Blue crab, 3, 30, 33, 34, 164, 171, 172, 181, 183, 186, 187 abundance, New England, 164– 70 blood nitrogen, determination of, 165 blood potassium, 34 blood sampling, 31, 165 blood sodium, 34 ciliate infestation, 171-3 distribution, Atlantic Coast, 30 fat determinations, 165 hypertonicity, 33 measurements of, 165 migratory patterns, 169 osmoconcentrations, blood, 31, 32, 33 osmoregulation, 30, 34 plasma constitutents, 168-9 plasma, sugar, 169 salinity range, 30 salt water acclimation, 31 seasonal size distribution, 166 Bluegill, 76, 79, 82 Bluespot sunfish, food habits, 83 Bohun, Sheila, 137–47
Bohun, Sheila, 137–47
Bolnopsis, 72
Bond, G. C., 208–12
Bookhout, C. G., 148–56; 157–63
Bottyllus schlosseri, 293 Botryllus schlosseri, 223 Bottom cores, estuary, 204 Bottom samplers, shallow water,

Brine shrimp, 100, 194 Brown bullhead, food habits, 87 Bullhead, black, 146

C

C. auralus, 146 C. carpio, 146 C. commersonii, 146 Calanus, 72 Calanus finmarchicus, 73 Calder, D. R., 223-4 Callinectes sapidus, 3, 30, 164, 166, 167, 171, 181, 182 Callistocythere reticulata, 40, 49, 53 Campylocythere laeva, 48, 53 Canadensis, 219 Cancer irroratus, 169 Canis lupus, 218 lupus lycaon, 218, 219 lycaon, 219 Carassium auratus, 38, 90, 198, 200 Carassius, 201 Cargo, D. G., 95-100 Carnoy's fluid, 199 Carolina chub, 77, 83 Carp, 146 Castagna, M., 179-88 Caterpillar, 98 Catfish, 146, 201 channel, 76, 194 Indian, 93 Catosiomus c. commersoni, 78, 87 Centrachus macropterus, 75, 78, 83 Cerataulina bergonii, 122, 123, 124, 125 Ceratium furca, 122, 123, 124, 125, 131 Cesium, trace element, 2 Chabot, B. F., 117-36 Chaenobryttus gulosus, 75, 83 Chaetoceros affinis, 14, 122, 123, 124, 125 compressus, 14, 119, 122, 123, 124. 125 lorenzianus, 122, 123, 124, 125 torenziarus. 122, 123, 124, 125 pendulum, 122, 123, 124, 125 septentrionalis, 122, 123, 124, 125 socialis, 122, 123, 124, 125 subilis, 122, 123, 124, 125, 126, 128 Chain pickerel, 76, 86 Chanley, P., 179-88 Channel catfish, 76, 194 Chasmodes bosquianus, 100 Chemical, animal control, 179 Chesapeake Bay, turbidity, 209 Chicks, 111 Chilomonas sp., 13, 14, 119, 121, 122, 123, 124, 125, 129, 130, 134 Chi-square test, 139, 141 Chloride concentration, estuary, 209-10 Cholesterol, fish, 173-4 Chrosomus oreas, 78, 85

215-7

Chrysaora quinquecirrha, 72, 95, 96, 97, 99, 100 Chubsucker, creek, 86 Ciliate infestation, crab, 171-3 Cilinostomus funduloides, 78, 84 Circadian rhythms, 137, 145, 146 Clam, 3, 7, 179, 181, 182 alkaline extraction, 213 hard, 181, 182 radiation tolerance, 38, 39 razor, 183 soft, 179, 213, 214 Clarke-Bumpus, 62 deflecting screen, 61 Clingfish, 100 Clithrocytherida, sp., 205 Cobalt-60 irradiation, 36-9 fish, 90 organism tolerance, 36-9 Cochlodinium, sp., 13, 14, 119, 122, 123, 124, 125, 129, 130 catenatum, 122, 123, 124, 125, 132 helicoides, 122, 123, 124, 125 pupa, 122, 123, 124, 125 Common shiner, 77, 83 Conchoecia borealis, 40 elegans, 40 obtusata, 40 Copepod, 59, 60, 62, 65, 69, 72, 79. 82 death rate, 60, 62, 63, 68, 69 distribution, estuary, 65 dry weight estimate, 73 fish food, 72 growth rate, 62, 65–7, 70, 71 net avoidance, 73 pivotal age, 68 production, Patuxent estuary, 59 - 74salinity range, 60 turnover time, 59, 62, 68, 69, 72 Core sampler, sediment, 216 Core sampling, 185 Coriolus effect, 25 Coscinodiscus sp., 119, 122, 123, 124, 125 124, 125
asteromphalus, 14
subtilis, 122, 123, 124, 125
Costlow, J. D., Jr., 148-56; 157-63
Couch, J. A., 171-3
Crab, 3, 30, 33, 34, 164, 165, 171,
172, 182, 186, 187 see under blue blood sampling, 165 blue, 181, 183, 186, 187 culturing, 149–50, 157–63 hardshell, 165 hermit, 183 larval stages, 149-56, 157-63 megalops, 151, 155, 162 pigmentation, 155, 162 mud, 3, 5, 181, 182, 183 pigmentation, 149, 155, 158 xanthid, megalops, 151, 155 xanthid, megalops, 151, 155 xanthid, megalops, pigmenta-tion, 155 xanthid, zoeal pigmentation, 149 xanthid, zoeal stages, 149–53, 162 Craft, C. C., 110–1 Crangon septemspinosa, 183

Crappie, 76 black, 83 Crassostrea virginica, 3, 38, 179 Cravfish, 81 Creek chubsucker, food habits, 86 Croaker, 5 Ctenophore, 61, 72 Culturing, crab, 149-50, 157-63 Cushmanidea, 40, 207 seminuda, 41, 47, 50, 205, 206, 207 ulrichi, 47 Cusk-eel, 215 striped, 214 Cyanihura sp., 184 Cyclops, 79 Cyclotella sp., 122, 123, 124, 125 Cyprideis, 47, 205 Cythereis albomaculata, 41 concinna, 41 dawsoni, 41 emarginata, 41 leioderma, 41 tuberculata, 41 Cytheretta danaiana, 47 edwardsi, 41, 47 sahnii, 47 Cytheridea? papillosa, 41 punctillata, 41 rubra, 51 ruota, 31 sorbyana, 41 Cythermorpha, 207 fuscala, 207 pascagoulaensis, 205 protapheles, 49, 55 Cytheropteron talquinensis, 48, 52 Cytheropteron talquinensis, 48, 52 Cytherura, 207 cf. C. gibba, 205, 207 forulata, 48, 52 gibba, 41, 48, 52 howei, 48, 52 pseudostriata, 40, 48, 52 undata, 41 wardensis, 48, 52 D Dace blacknose, 77, 85 mountain redbelly, 78, 85

mountain reducity, 78, 83
rosy, 78, 84
Daphnia, 59, 72
Darter, 77, 85
food habits, 85
northern swamp, 85
stripeback, 101-9
Darwinula stevensoni, 206
Davis, Edna M., 90-4
Day-Glo pigments, 186
Deer
organ-body weight relationship,
217-8
white-tailed, 217, 218
Diaptomus salinus, 59
Diatom, 77, 85, 119, 126
seasonal abundance, 13
Dichelaspis, 171
Dissodactylus mellitae, 162
Dithizone extraction technique, 4
Ditylum brightwelli, 122, 123, 124,
125
Dorosoma cepedianum, 173, 190

Dosinia exoleta, 112
lineta, 112
lupinus lineta, 112
Drawing aid, biological, 149, 157
Drift nets, 190, 191
Drill, oyster, 179, 180, 181, 182, 183, 186, 187
toxicity, benzene mixture, 185
Drum, black, 174
Dry-ashing, 4
Dry weight estimate, copepod, 73
Duke, T. W., 1-10

E

E. gibbosus, 146 E. lucius, 146 E. nigrum, 75 Earthworms, 98 Eastern madtom, food habits, 87 Eastern mud minnow, food habits, Eastern wolf, 218; ancestry, 218 Ecteinascidia turbinata, 223, 224 Ectocarpus, 3, 5 Eel, 137–47 American, 215 Cusk, 215 Cusk, striped, 214 light inhibition, 138 locomotor activity, 137-47 nocturnal activity, 140-7 snake, 214 Eelgrass, 206, 207 Elliott, H. A., 203-7 Ellison, R. L., 203-7; 215-7 Engle, D. W., 90-4 Enneacanthus gloriosus, 75, 78, 79, 83 obesus, 77 Ensis directus, 185 Enteromorpha, 3, 5 Epistylis, 171 Erimyzon o. oblongus, 78, 86 Eriocheir, 169 Eriphia spinifrons, 155 Esox niger, 75, 76, 78, 79, 86 Estuarine circulation, water, 204 chloride concentration, 209-10 horizontal boundary, 24 sediment cores, 204 suspended minerals, 208-12 types, 64 Etheostoma (Boleosoma), 85 f. fusiforme, 78, 85 nigrum, 75, 77, 78, 80, 85 Eucinostomus, 38 Eucythere argus, 41, 47 declivis, 41, 47 Eupagarus, 171 Eupleura caudata, 179 European wolf, 218 Euryhalinity, fish, 193 Eurypanopeus depressus, 148, 155 Extinction coefficient, photosynthesis, 119

F

F. diaphanus, 196 F. kansae, 196

F. majalis, 196 Fabia subquadrata, 157, 162, 163 Fallfish, food habits, 84 Fat determination, crab, 165 Feather blenny, 100 Feeding-sex maturity relationship —fish, 189-92 Fight net, 190, 191 Filefish, orange, 100 Fish activity, measurement of, 138-47 age analysis, 77 alimentary canal puncture, 214, 215 anesthetic, 194 blood chemistry, 173-5 blood sampling, 90-1, 173-4 blood sugar, 198-201 distribution, Tuckahoe Creek, Va., 75-89 euryhalinity, 193 fasting, 192 feeding behavior, 189-92 feeding-sex maturity relationship, 189-92 food habits, 75-89, 77, 82, 83, 84, 85, 86, 87, 137-47, 173 gear drift net, 190-1 fight net, 190, 191 gill net, 190 hook & line, 190, 191 hematological responses, 90 hyperplasia, 199 irradiation, 90-4 irradiation doses, 90-1 light inhibition, 138 locomotor activity, 137-47 nocturnal activity, 140-7 plasma cholesterol, 173-4 constituents, 173-4 ion concentration, 173 protein measurements, 173 prey, size correlation, 82 radiation sensitivities, 90 radiation tolerance, 37, 38 salinity tolerance in Fundulus larvae, 193-97 sampling seine, 76 spawning induced, 193-7 spawning period feeding, 192 stomach analysis, 190 tissue staining, 199-200 Fixative, Bouin's fluid, 199-200 Flagellates, seasonal abundance, 12, 13 Flemer, D. A., 75–89 Flier, 78, 83 Flounder, southern, 37, 38 Fluorescent resin, sand grain marking, 185, 187 Folliculina, 100 Foraminifera, 206 Fournier, R. O., 11-9 Fundulus, 176, 196, 197 heteroclitus, 3, 37, 93, 193, 194, 195, 196, 197 paravipinnus, 196

G

Gambusia affinis, 75 affinis holbrooki, 78, 86 Gamma radiation, fish, effect on erythrocytes, 91 leucocytes, 92-4 thrombocytes, 92 Gill nets, 190 Gizzard shad, 173, 190, 192 Glycera dibranchiata, 97, 98 Gobiesox strumosus, 100 Gobiosoma bosci, 100 Goby, naked, 100 Golden shiner, 84, 190, 191, 192 food habits, 84 Goldfish, 38, 90, 93, 146, 194, 198, 201 radiation tolerance, 38 Gonyaulax sp., 122, 123, 124, 125 Grab sampler, 215-6 Gryosigma spenceri, 122, 123, 124, 125 Guillard's medium 'f', 12 Gymnodinium sp. 13, 14, 122, 123, 124, 125, 126, 128, 129, 130 brevis, 119, 122, 123, 124, 125 splendens, 122, 123, 124, 125, 132

H

H. americana, 51

Hadropterus maculatus, 104 notogrammus, 101 Halichondria bowerbanki, 223 Hamer, P. E., 214-5 Hanks, R. W., 175-6 Haplocytheridea bradyi, 47 choctawhatcheensis, Hard clam, 3, 181, 182 Hard-shell crab, 165 Harvest fish, 100 Hassler, W. W., 189-92 Haven, D., 179-88 Heinle, D. R., 59-74 Hematological responses, fish, 90 Hemicythere, 205 villosa, 41 Hemigrapsus oregonensis, 33, 34 Hermit crab, 183 Heron, 222 Herring blueback, 192 salinity tolerance, 196 Hexagenia, 79 Hexapanopeus angustifrons, 148, 149, 150, 151, 152, 153, 154, 155, 156 Hillman, R. E., 112-3 Histology, fish, 199 H. nudus, 33 Hogarth, W. T., 101-9 Homoiothermous vertebrates, 217 Honeysuckle, 76 Hook and line, fishing, 190, 191 Hormone-induced spawning, fish, 193 - 7Hulings, N. C., 40-56 Hulingsina, 51 Hulingsina cf. H. sulcata, 205 Hunn, J. B., 173-5

Hybognathus nuchalis regius, 78, 85
Hybopsis bigultata, 84
leptocephala, 75, 77, 78, 83, 84
micropogon, 84
Hydraulic dredge-sieve sampler, 180
Hydrographic data, Rappahannock River, Va., 204
Hyperplosia, adrenal gland, fish, 199
Hypertonicity, crab, 33
Hypsoblennius hentzi, 100

1

I. melas, 146
Ictalurus natalis, 78, 87
nebulosus, 78, 87, 146
punctatus, 76
Ilyocythere, 47
Incident light, photosynthesis, 119
radiation, 126
Indian catfish, 193
Irradiation chamber
small organisms, 37
Cobalt 60, 36–9, 90
fish, 90–4
Isotonicity, shrimp, 34

1

Jeffries, H. P., 164-70 Jellyfish, 61, 72 Joseph, E. B., 193-7

K

Killifish, salinity tolerance, 195,

L

L. artedi, 146 L. bellus diegensis, 148 L. eupagarus, 171 L. metopauliadis, 171 L. vaginocola, 171 Lagenophrys, 171, 172 Lagodon rhomboides, 38, 90 Largemouth bass, food habits, 83, 146, 173 Ldso, 36-9 Lepomis auritus, 75, 78, 82 gibbosus, 78, 82, 173 macrochirus, 75, 76, 77, 78, 79, 80, 82 Leptocylindrus danicus, 119, 121, 122, 123, 124, 125, 134 Light inhibition, fish, 138 Lily pads, 79 Limnocythere sp. A., 205; sp. B., 205, 206 Littorina irrorata, 3 Locomotor activity, fish, 137-47 Lophopanopeus leucomanus leucomanus, 148 Lowry, J. K. 223-4 Loxoconcha, 206 granulata, 49, 55 impressa, 205, 206

Lumbrineris tenuis, 184 Lycaon, 219

M

Madtom, eastern, 87 Mammal adrenocorticotrophic hormone, allometric relationship, 217 Mantis shrimp, 183 Mantle, fold origin, Quahog, 112-3 Manville, R. H., 218-20 Marsh grass, 3 Massartia rotundata, 13, 122, 123, 124, 125 Meade, R. H., 208-12 Melosira sp. 119, 122, 123, 124, 125 borreri, 122, 123, 124, 125 islandica, 122, 123, 124, 125 sulcata, 122, 123, 124, 125 Menidia, 176 Menippe mercenaria, 148, 155 Mercenaria mercenaria, 3, 38, 179, 182 Methyl carbamate Sevin, drill control, 179 Metopaulias depressus, 171 Mice, white, 111 Microcytherura choctawhatcheensis, 48, 52 fulva, 48, 52 Microflagellate, 119 Micropogon undulatus, 3, 37 Micropterus salmoides, 83, 146, 173 s. salmoides, 78 Migration, crab, 169 Millipore-filtered, 7
"Milky water," decomposing veg-etation, 175-6 Minchinia costalis, 187 Minnow, 146; silvery, 85 Mitrella lunata, 185 Mnemiopsis, 72 Mojarra, 37; radiation tolerance, 37 Molgula manhattensis, 223 Mollusc, 171, 184, 185, 188; glycogen content, 213 Mollusk, 6 Morpha fuscata, 205 Mosquitofish, food habits, 86 Mountain redbelly dace, 78, 85 Moxostoma rhothoeca, 78, 86 Mozosłoma rhothoeca, 78, 86
MS 222, anesthetic, 194, 195
Mud crab, 3, 5, 181, 182, 183
Mudminnow, eastern, 87
Mud shrimp, 183; snail, radiation
tolerance, 37, 38
Mugil cephalus, 37
Mullet, striped, 37, 38
Mummichog, 3, 5, 37, 193
radiation tolerance, 37, 38
Murraying canadensis, 41, 49, 55 Murrayina canadensis, 41, 49, 55 Mya arenaria, 179, 213 Mysid, 72

N

Nace, P. F., 198-202 Naked goby, 100 Nassarius obsoletus, 37 Navicula spp. 119, 122, 123, 124, 125 Neopanope packardii, 148, 155 texana sayi, 148, 155 Nereis succinea, 98 virens, 98 Net avoidance, plankton, 73 Nichols, M. M., 203-7; 215-7 Nitrogen determination, blood, crab, 165 Nitzschia closterium, 122, 123, 124, 125 pungens var. atlantica, 14 Northern pike, 146 ern swamp habits, 85 Northern darter, food crysoleucas, 78, 84, Notemigonus 189, 190 Notropis analostanus, 78, 83 cornutus, 75, 77, 78, 83 rubellus, 78, 83 semperasper, 77 Noturus i. insignis, 78, 87 Nutrients, as narcotic, 17 enrichment, phytoplankton, 11-9 inhibition, 16

0

Odocoileus virginianus, 217 Oguri, M., 198-202 Opichthidae, 214 Opsanus tau, 173 Orange filefish, 100 Organ-body weight relationship, deer, 217-8 Osmoregulation crab, 30, 34 shrimp, 34 Osprey, 220, 221, 222, 223 distribution, New Jersey, 221–2 pound net relationship, 221–2 Ostracod, 203, 206 description, 40 description, 40 distribution estuary, 203-7 Rappahannock River, 203-7 paleoecological conditions indi-cator, 203-7 sexual dimorphism, 50, 52, 54 western North Atlantic, 40-56 Ostracoda, 204 Oxygen analysis, water, 12 dissolved, Chesapeake Bay, 176 sampling, 119 Oyster, 5, 7, 38, 100, 180, 181, 184, 185, 18€, 187, 213, 214 radiation tolerance, 38, 39 spat, 179 toadfish, 173, 174 toxic, as chick food, 110-1 Oyster drill, 183 control, 179 radiation tolerance, 38

P

P. ostreum, 157, 162, 163 P. phorinus, 146 P. pisum, 157, 162 P. taylori, 157, 162, 163 P. veterum, 157, 162, 163 Pachygrapsus crassipes, 33, 34 Pagurid, 183 Pandion haliaetus carolinensis, 220 Panopeus herbstii, 3, 148, 155, 156 Parafolliculina, 100 Paralichthys lethostigma, 37 Paraxanthias taylori, 148 Patten, B. C., 20-9; 117-36 Patuxent estuary, physical characteristics, 63-4 Pelecypod, 184, 185 Penaeus duorarum, 34 setiferus, 34 Peprilus alepidotus, 100 Perca flavescens, 146, 173 Perch, 146 pirate, 77, 86 white, 173, 174 yellow, 146, 173 Percina notogramma, 78, 86, 101, 108 montuosa, 101, 102, 106, 107, 108, 109 notogramma, 102, 103, 104, 106, 107, 109 peltata, 101, 105, 109 peltata peltata, 104 Peridinium sp., 122, 123, 124, 125 depressum, 122, 123, 124, 125, 126, 127, 128, 129, 134, 135 monospinum, 122, 123, 124, 125 triquetrum, 13, 119, 122, 123, 124, 125 Perissocytheridea brachyforma, 205, 206, 207 Perophora viridus, 223, 224 Petersen dredge, 184 Petersen grab, 40, 180, 188 Photosynthesis extinction coefficient, 119 incident light, 119 water column, vertical, 120-36 Phytoplankton autotrophic synthesis, 20 inhibition, 16 nutrient enrichment, 11-9 production, 15 respiration, 15 Pickerel, 79 chain, 76, 86 Pigment, Day-Glo, 186 Pike, northern, 146 Pikeperch, yellow, 146 Pilumnus sp., 155 sayi, 148 Pinfish, 38, 90, 93 gamma irradiation, effects of, 90-4 radiation tolerance, 38 Pinnotheres maculatus, 157 159, 160, 161, 162, 163 157, 158, Pipefish, 215 Pirate perch, 77, 86 food habits, 86 Plankton net avoidance, 73

sub sampling, 62

Pogonias cromis, 174

124, 125, 128

Plasma constituents, crab, 168-9

Pleurosigma angulatum, 122, 123,

Polar planimetry, 62
Polychaete, 183, 184, 188
Polystream (benzene), drill control, 179
Pomoxis, 76
nigromaculatus, 78, 83
Pontocythere argicola, 47
ashermani, 47
rubra, 41
tehernjawskii, 51
turbida, 47, 51
Price, T. J., 1-10
Productivity
estuary, 117-36
factorial, 117-36
primary, 117-36
primary, 117-36
primary, determinations, 117
Propontocypris, 46
howei, 42, 46, 47
trigonella, 46

trigonella, 46
Prorocentrum micans, 13, 119, 122, 123, 124, 125, 131, 133
Protein measurements, fish plasma, 173

Protocytheretta, 40
Protothaca (= Venerupis) staminea,
112
Protothaca (55

Pseudocythereis spinifer, 49, 55 Pumpkinseed, food habits, 82, 173 Puriana rugipunctata, 49, 55

Q

Quahog, 112-3 mantle fold origin, 112-3

R

Radiation animal tolerances, 36-9, 90 clam, 38, 39 fish, 37, 38, 90 mullet, 37, 38 oyster, 38, 39 oyster drill, 38 snail, 37, 38 sensitivities, fish, 90 Radioactive sodium, 2 Rainbow trout, radiation tolerance, 38 Redbreast sunfish, 78 Respiration, phytoplankton, 15 Retusa canaliculata, 185 Rhinichthys atratulus, 77, 78, 85 Rhithropanopeus harrisii, 155, 156 Rhizoclonium tortuosum, 3, 5 Rhizosolenia calcar avis, 122, 123, 124, 125, 128 delicatula, 122, 123, 124, 125 fragilissima, 14, 122, 123, 124, 125 Rhodomonas (?) sp., 122, 123, 124, 125, 128, 129, 135 Rhythms, biological, 137, 138 Rissola, 215 marginala, 214 Roberts, M. H., Jr., 20-9 Robinson, P. F., 173-5; 217-8 Roccus americanus, 173 saxatilis, 174, 189, 214 Rockbass, 146 Rosen, B., 213-4 Rosy dace, 78, 84

Rosyface shiner, food habits, 83 Roughhead shiner, 77

S

S. canadense, 146 S. vitreum, 146 S. vulgaris, 146 Sahnia fasciata, 41, 48 subulata, 48 Saksena, V. P., 193-7 Salinity range, copepod, 60 crab, 30 sampling, 119 tolerance ascidian, 223 herring, 196 killifish, 195, 196 larvae vs. adult, fish, 196 mummichog, 193–97 sea nettle, 98 Salmo gairdnerii, 38 Salmon, 201 Salt water acclimation, crab, 31 Sampler, Clarke-Bumpus, 61, 62 Sampling blood, 90-1, 173-4 bottom grab, 215-6 copepod, 60 crab, 165 dissolved oxygen, 119 fish, drift nets, 190-1 hydraulic dredge, 180, 181, 183 millipore filter, 5 Petersen dredge, 184 Petersen grab, 40, 180, 188 plankton, 62 salinity, 118 sea nettle polyp, 96 sediment, 22 sediment cores, 185 seine, 76 temperature, 118 Sand grain marking, 185 size analysis, 208-9 Sand lance, 215 Sand shrimp, 183 Sarsiella zostericola, 41 Sarsocythere, 41 Satinfin shiner, food habits, 83 Saugers, 146 Saxidomus giganteus, 112 Scale analysis, aging, fish, 77 Scallop, 3, 6, 7; bay, 157 Schmid, F. C., 220-3 Schultz, L. P., 95-100 Scintillation detector, 3 Sculpin, 201 Sea gull, 176 Sea lettuce, 175 Sea nettle, 72 biology, 95-100 cyst formation ephyrae distribution, Chesapeake Bay, 97 fish food, as, 100 growth, temperature factor, 99 polyp distribution, Chesapeake Bay, 97 polyp substrata, 96

salinity tolerance, 98 sampling, 96 survival, salinity factor, 98-9 Sea urchin, 37, 38 Seaweeds, 3 Sediment adsorption, 5, 6 core sampler, 185 cores, estuary, 3 dry ashing, 4 grain marking, 185, 187 sampling, 22, 216 size, estuary, 3 traps, 22 Semolilus corporalis, 78, 84 sinking characteristics, 20-9 vertical distribution, 20-9 Sexual dimorphism, ostracod, 50, 52, 54 Shad, 72, 222 gizzard, 190, 192 Shiner common, 77, 83 golden, 84, 190, 191, 192 rosyface, 83 roughhead, 77 satinfin, 83 Short razor clam, 183 Shrimp, 81 brine, 194 isotonicity, 34 mantis, 183 mud, 183 osmoregulation, 34 sand, 183 Shuster, C. N., Jr., 112-3 Silvery minnow, food habits, 85 Sinking rate, solids, 27 Size analysis, sand grains, 208-9 Size distribution, mineral grains, 208 - 12Skeletonema, 128, 129, 130, 131, 134 costatum, 14, 17, 119, 122, 123, 124, 125, 126, 133 Snail, 3, 82 mud, 37, 38 radiation tolerance, 38 Snake eel, 214 Soft clam, 179, 213, 214 glycogen extraction, 213 Sole, 146 Southern flounder, radiation tolerance, 37, 38 Spartina alterniflora, 3, 5, 21 Spat, oyster, 179 Spectrometer, 3 Sponge, 223 Squilla empusa, 183 SSO, pathogen, 187 Staining fish tissue, 199, 200 invertebrates, rose Bengal stain, 204 Stomach analysis, fish, 190 Stream classification, freshwater, 79 Stripeback darter distribution, Chesapeake drain-age, 101-9 fin count, 107-8 food habits, 86

James River population, 101-9 meristic index, 106, 107-8 scale count, 105, 106, 107-8 vertebral count, 107-8 Striped bass, 174, 189, 190, 191, 192, 214, 215 feeding behavior, 189-92 Striped blenny, 100 cusk-eel, 214 mullet, radiation tolerance, 37, 38 Sturtevant, W. C., 218-20 Sub-sampling, plankton, 62 Sucker, 146; torrent, 78, 86; white, Sunfish, 146 banded, 77 bluespot, 83 redbreast, 78 warmouth, 83 vellow belly, 82

1

Suspended mineral grains, estu-

ary, 208-12

Syngnathus sp., 215

Swamp darter, northern, 85

Tagelus divisus, 183, 185
Tan, Eng-Chow, 30-5
Tapes semidecussala (=philippinarum), 112
Tatro, M. C., 213-4
Temperature sampling, 118
Tench, 90, 93
Test, chi square, 139, 141
Thais lamellosa, 38
Thalassionema nitzschioides, 122, 123, 124, 125
Thalassiosira sp., 122, 123, 124, 125
gravida, 122, 123, 124, 125
Thornborough, J. K., 223-4

Tinca vulgaris, 90
Toadfish, 198, 201
oyster, 173, 174
Torrent sucker, 78, 86
Trace element analysis, 3
cesium, 2
detection, scintillation detector, 3
detection, spectrometer, 3
estuary, 1-10
experimental ponds, 2, 3
radioactive sodium, 2
Trachyleberis dunelmensis, 41
Trapezia sp., 155
Trent, L., 189-92
Triginglymus arenicola, 41, 49, 53
denticulata, 40, 49, 53
Trout, 201; rainbow, 38
Turbidity, Chesapeake Bay, 209
Tullibee, 146

U

Ulva, 175, 176 lactuca, 175 Umbra limi, 87 pygmaea, 78, 87 Upogebia affinis, 183 Urocythereis, 205 Urosalpinz cinerea, 38, 179, 182

V

Van Engel, W. A., 30-5 Venerupis pullastra, 112 Venus striatula, 112

w

Walters, L. C., 110-1 Ward, Janice, 213-4 Warmouth sunfish, 83 Wass, M., 179–88
Whipple disc, drawing, 149, 157
Whirligig beetles, 81
Whitcomb, J., 179–88
White, J. C., Jr., 36–9
White mice, 111
White perch, 173, 174
White sucker, food habits, 87
White-tailed deer, 217, 218
Willis, J. N., 1–10
Winn, H. E., 137–47
Wolf
eastern, 218
European, 218
European, 218
Woolcott, W. S., 75–89; 101–9

X

Xantho sp., 155 Xestoleberis depressa, 41

Y

Yellowbelly sunfish, 82 Yellow bullhead, 87 food habits, 87 Yellow perch, 146, 173 Yellow pikeperch, 146 Young, D. K., 20-9

7

Zinc, sea water content, 1 stable, 1–10
Zinc 65, 2 invertebrate accumulation, 5, 6 seaweed accumulation, 5 sediment adsorption, 5, 6 sediment reservoir, 7 trace element, 1–10 vertebrate accumulation, 5 Zoeal stages, see under crab Zostera maritima, 206

